



**ANCHOR CONTINENTAL, INC.**

90-890000536  
CONTAINS NO OBI

July 5, 1989

Document Processing Center  
Office of Toxic Substances, TS-790  
United States Environmental Protection Agency  
401 M Street, Southwest  
Washington, D.C. 20460

Attn: CAIR Reporting Office

Dear Sir/Madam:

Enclosed is the Comprehensive Assessment Information Rule (CAIR) Reporting Form which supplies information concerning the processing of Toluene Diisocyanate (TDI).

Please call if you should have any questions.

Very truly yours,

*Rick Carnell*

Rick Carnell  
Environmental Engineer

/lm

29 JUL 13 PM 3:20

CONTAINS NO CBI



Form Approved  
OMB No. 2010-0019  
Approval Expires 12-31-89



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90-890000536

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Comprehensive Assessment Information Rule  
REPORTING FORM

When completed, send this form to:

Document Processing Center  
Office of Toxic Substances, TS-790  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460  
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: \_\_\_\_\_

Document  
Control Number: \_\_\_\_\_

Docket Number: \_\_\_\_\_

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [1][2] [2][2] [8][8]  
CBI mo. day year

☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. .... [0][2][6][4][7][1]-[6][2]-[5]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule ..... N/A

(ii) Name of mixture as listed in the rule .... N/A

(iii) Trade name as listed in the rule ..... N/A

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule ..... N/A

CAS No. of chemical substance ..... [N][A][ ][ ][ ][ ]-[ ][ ]-[ ]

Name of chemical substance ..... N/A

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI Manufacturer ..... 1

☐ Importer ..... 2

Processor ..... 3

X/P manufacturer reporting for customer who is a processor ..... 4

X/P processor reporting for customer who is a processor ..... 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI  
☐ Yes ..... ☒ Go to question 1.04  
☐ No ..... ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI  
☐ Yes ..... 1  
☐ No ..... 2

b. Check the appropriate box below:

☒ You have chosen to notify your customers of their reporting obligations  
Provide the trade name(s) .... N/A

☒ You have chosen to report for your customers

☒ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI  
Trade name ..... TDI 80 Type 2  
☐ Is the trade name product a mixture? Circle the appropriate response.  
Yes ..... 1  
No ..... 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI  
☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

Bernard J. Lipka  
NAME

*Bernard J. Lipka*  
SIGNATURE

7/6/89  
DATE SIGNED

Vice President - Technical  
TITLE

( 803 ) 799 - 8800  
TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

CBI

☐

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

_____ N/A NAME	_____ SIGNATURE	_____ DATE SIGNED
_____ TITLE	(_____) _____ TELEPHONE NO.	_____ DATE OF PREVIOUS SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI

☐

"My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

_____ N/A NAME	_____ SIGNATURE	_____ DATE SIGNED
_____ TITLE	(_____) _____ TELEPHONE NO.	

☐ Mark (X) this box if you attach a continuation sheet.

**PART B CORPORATE DATA**

### 1.09 Facility Identification

CBI    Name [A][N][C][H][O][R] [ ] [C][Q][N][T][I][N][E][N][T][A][L] [ ] [ ] [ ]  
[ ] Address [2][0][0][0] [ ] S O U T H [ ] B E L T [ ] I N E [ ] B L V D . [ ]  

Street

[C][O][L][U][M][B][I][A] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  

City

[S][C]  
State

[2][9][2][0][5] -- [ ][ ][ ]  
Zip

Dun & Bradstreet Number ..... [0][0]-[3][3][4]-[4][8][4][3]

EPA ID Number ..... SCD [0][0][3][3][4][4][8][4][3]

Employer ID Number ..... [5][1][0][2][3][8][1][3] 1

Primary Standard Industrial Classification (SIC) Code ..... [2][6][7][2]

Other SIC Code ..... [3][0][6][9]

Other SIC Code ..... [2][8][9][1]

### 1.10 Company Headquarters Identification

N/A

[illegible]

☐ Mark (X) this box if you attach a continuation sheet.

### 1.11 Parent Company Identification

CBI    Name   [ T ] [ H ] [ E ] [ \_ ] [ L ] [ I ] [ N ] [ C ] [ O ] [ L ] [ N ] [ \_ ] [ G ] [ R ] [ O ] [ U ] [ P ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ]  
[ \_ ]   Address   [ P ] [ O ] [ \_ ] [ R ] [ O ] [ X ] [ \_ ] [ 5 ] [ 5 ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ]  
Street  
  
               [ L ] [ I ] [ N ] [ C ] [ O ] [ L ] [ N ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ] [ \_ ]  
City  
  
[ R ] [ I ]      [ 0 ] [ 2 ] [ 8 ] [ 6 ] [ 5 ] -- [ \_ ] [ \_ ] [ \_ ] [ \_ ]  
State                  Zip  
  
Dun & Bradstreet Number ..... { 1 } { 5 } - { 1 } { 1 } { 7 } - { 6 } { 6 } { 6 } { 6 }

## 1.12 Technical Contact

[illegible]

1.13 This reporting year is from ..... 01 88 to 12 88  
Mo. Year Mo. Year

☐ Mark (X) this box if you attach a continuation sheet.

[illegible][illegible]

8



1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

<input type="checkbox"/> <u>Classification</u>	<u>Quantity (kg/yr)</u>
Manufactured .....	N/A
Imported .....	N/A
Processed (include quantity repackaged) .....	78,974
Of that quantity manufactured or imported, report that quantity:	
In storage at the beginning of the reporting year .....	N/A
For on-site use or processing .....	N/A
For direct commercial distribution (including export) .....	N/A
In storage at the end of the reporting year .....	N/A
Of that quantity processed, report that quantity:	
In storage at the beginning of the reporting year .....	3,629
Processed as a reactant (chemical producer) .....	78,974
Processed as a formulation component (mixture producer) .....	N/A
Processed as an article component (article producer) .....	N/A
Repackaged (including export) .....	N/A
In storage at the end of the reporting year .....	3,629

☐ Mark (X) this box if you attach a continuation sheet.

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

(T)

☐ Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

☐ Year ending ..... [1][2] [8][7]  
Mo. Year

Quantity manufactured ..... N/A kg

Quantity imported ..... N/A kg

Quantity processed ..... 71,488 kg

Year ending ..... [1][2] [8][6]  
Mo. Year

Quantity manufactured ..... N/A kg

Quantity imported ..... N/A kg

Quantity processed ..... 54,904 kg

Year ending ..... [1][2] [8][5]  
Mo. Year

Quantity manufactured ..... N/A kg

Quantity imported ..... N/A kg

Quantity processed ..... 60,588 kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

N/A

☐ Continuous process ..... 1

Semicontinuous process ..... 2

Batch process ..... 3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

- ☐ Continuous process ..... 1
- ☐ Semicontinuous process ..... 2
- ☐ Batch process ..... 3

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

- ☐ Manufacturing capacity ..... N/A kg/yr
- ☐ Processing capacity ..... kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

<input type="checkbox"/>	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase			N/A
Amount of decrease			N/A

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

	<u>Days/Year</u>	<u>Average Hours/Day</u>
Process Type #1 (The process type involving the largest quantity of the listed substance.)		
Manufactured .....	_____	_____
Processed .....	79	5
Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)		
Manufactured .....	N/A	N/A
Processed .....	N/A	N/A
Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)		
Manufactured .....	N/A	N/A
Processed .....	N/A	N/A

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

Maximum daily inventory .....	N/A	kg
Average monthly inventory .....	_____	kg

☐ Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity<sup>1</sup></u>	<u>Concentration (%) (specify <math>\pm</math> % precision)</u>	<u>Source of By-products, Coproducts, or Impurities</u>
N/A	None			

<sup>1</sup>Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct  
C = Coproduct  
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types <sup>1</sup>	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users <sup>2</sup>
B	100	100	I

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types <sup>1</sup>	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users <sup>2</sup>
B	100	100	I

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.



2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type <sup>1</sup>	Final Product's Physical Form <sup>2</sup>	Average % Composition of Listed Substance in Final Product	Type of End-Users <sup>3</sup>
N/A	N/A	N/A	N/A

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

<sup>3</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the  
CBI listed substance to off-site customers.

N/A

- ☐ Truck ..... 1  
Railcar ..... 2  
Barge, Vessel ..... 3  
Pipeline ..... 4  
Plane ..... 5  
Other (specify) \_\_\_\_\_ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers  
CBI or prepared by your customers during the reporting year for use under each category  
of end use listed (i-iv).

☐

Category of End Use

i. Industrial Products

N/A

Chemical or mixture ..... kg/yr  
Article ..... kg/yr

ii. Commercial Products

Chemical or mixture ..... kg/yr  
Article ..... kg/yr

iii. Consumer Products

Chemical or mixture ..... kg/yr  
Article ..... kg/yr

iv. Other

Distribution (excluding export) ..... kg/yr  
Export ..... kg/yr  
Quantity of substance consumed as reactant ..... kg/yr  
Unknown customer uses ..... kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

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SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

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PART A GENERAL DATA

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- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
- CBI The average price is the market value of the product that was traded for the listed substance.

☐

<u>Source of Supply</u>	<u>Quantity (kg)</u>	<u>Average Price (\$/kg)</u>
The listed substance was manufactured on-site.	N/A	N/A
The listed substance was transferred from a different company site.	N/A	N/A
The listed substance was purchased directly from a manufacturer or importer.	78,974	\$0.512/Kg
The listed substance was purchased from a distributor or repackager.	N/A	N/A
The listed substance was purchased from a mixture producer.	N/A	N/A

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

☐

Truck .....	1
Railcar .....	2
Barge, Vessel .....	3
Pipeline .....	4
Plane .....	5
Other (specify) _____	6

---

☐ Mark (X) this box if you attach a continuation sheet.

---

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.  
CBI

☐

Bags ..... 1  
Boxes ..... 2  
Free standing tank cylinders ..... 3  
Tank rail cars ..... 4  
Hopper cars ..... 5  
Tank trucks ..... 6  
Hopper trucks ..... 7  
Drums ..... 8  
Pipeline ..... 9  
Other (specify) \_\_\_\_\_ 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders ..... N/A mmHg  
Tank rail cars ..... N/A mmHg  
Tank trucks ..... N/A mmHg

☐ Mark (X) this box if you attach a continuation sheet.

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PART B RAW MATERIAL IN THE FORM OF A MIXTURE

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3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify <math>\pm</math> % precision)</u>	<u>Amount Processed (kg/yr)</u>
N/A			

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☐ Mark (X) this box if you attach a continuation sheet.

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PART C RAW MATERIAL VOLUME

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3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify $\pm$ % precision)
Class I chemical	78,974	100
Class II chemical		
Polymer		

---

☐ Mark (X) this box if you attach a continuation sheet.

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## SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

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### General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

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### PART A PHYSICAL/CHEMICAL DATA SUMMARY

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- 4.01 Specify the percent purity for the three major<sup>1</sup> technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

☐ CBI

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	<u>N/A</u> % purity	<u>N/A</u> % purity	<u>100</u> % purity
Technical grade #2	<u>N/A</u> % purity	<u>N/A</u> % purity	<u>N/A</u> % purity
Technical grade #3	<u>N/A</u> % purity	<u>N/A</u> % purity	<u>N/A</u> % purity

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<sup>1</sup>Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ..... 1

No ..... 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company ..... 1

Another source ..... 2

---

☐ Mark (X) this box if you attach a continuation sheet.

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4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes ..... 1  
No ..... 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

☐

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	3	4	5
Store	1	2	3	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

☐ Mark (X) this box if you attach a continuation sheet.



4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles  $\geq 10$  microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

☐

Physical State		Manufacture	Import	Process	Store	Dispose	Transport
Dust	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns						
	5 to <10 microns						
Powder	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns						
	5 to <10 microns						
Fiber	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns						
	5 to <10 microns						
Aerosol	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns						
	5 to <10 microns						

☐ Mark (X) this box if you attach a continuation sheet.

## SECTION 5 ENVIRONMENTAL FATE

### PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) .... 871 (1/M cm) at 284 nm  
 Reaction quantum yield,  $\phi$  ..... Unknown at \_\_\_\_\_ nm  
 Direct photolysis rate constant,  $k_p$ , at ...  $< 1.2 \times 10^{-3}$  1/hr (when  $\text{NO}_2$  photolysis rate is 0.37 hr<sup>-1</sup>)

b. Oxidation constants at 25°C:

For  $^1\text{O}_2$  (singlet oxygen),  $k_{ox}$  ..... Unknown 1/M hr  
 For  $\text{RO}_2$  (peroxy radical),  $k_{ox}$  ..... Unknown 1/M hr

c. Five-day biochemical oxygen demand,  $\text{BOD}_5$  ... Not Applicable mg/l  
 (reacts rapidly with water)

d. Biotransformation rate constant:

For bacterial transformation in water,  $k_b$  ... No oxygen consumed 1/hr  
 Specify culture ..... in modified MITI test

e. Hydrolysis rate constants:

For base-promoted process,  $k_b$  ..... Unknown 1/M hr  
 For acid-promoted process,  $k_a$  ..... Unknown 1/M hr  
 For neutral process,  $k_n$  ..... Unknown 1/hr

f. Chemical reduction rate (specify conditions) Unknown but not expected

g. Other (such as spontaneous degradation) ... Polyurea formation under hydrolytic conditions.

☐ Mark (X) this box if you attach a continuation sheet.

## PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	<<1 day in water solution
Atmosphere	26 hr
Surface water	<<1 day in water solution
Soil	<1 day

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
Unknown	Polyurea	>1 yr	water and soil
95-80-7	2,4-Toluene diamine	<1 day	biological waste-water treatment facil
823-40-5	2,6-Toluene diamine	<1 day	
5206-52-0	Urea, NNNN -bis(3-isocyanato-4-methylphenyl)	Unknown	water

5.03 Specify the octanol-water partition coefficient,  $K_{ow}$  ... Not Applicable at 25°C

Method of calculation or determination ..... (reacts with both octanol and water)

5.04 Specify the soil-water partition coefficient,  $K_d$  ..... Not Applicable at 25°C

Soil type ..... (reacts with water)

5.05 Specify the organic carbon-water partition coefficient,  $K_{oc}$  ..... Not Applicable at 25°C  
(reacts with water)

5.06 Specify the Henry's Law Constant,  $H$  ..... Not Applicable atm-m<sup>3</sup>/mole  
(reacts with water)

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

<u>Bioconcentration Factor</u>	<u>Species</u>	<u>Test<sup>1</sup></u>
<u>None detected</u>	<u>Moina macrocopia Straus</u>	<u>Not defined</u>
<u>None detected</u>	<u>Cyprinus carpio</u>	<u>Not defined</u>
<u>                    </u>	<u>                    </u>	<u>                    </u>

<sup>1</sup>Use the following codes to designate the type of test:

F = Flowthrough  
S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of  
CBI the listed substance sold or transferred in bulk during the reporting year.

☐

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales	_____	_____
Distribution -- Wholesalers	_____	_____
Distribution -- Retailers	_____	_____
Intra-company transfer	_____	_____
Repackagers	_____	_____
Mixture producers	_____	_____
Article producers	_____	_____
Other chemical manufacturers or processors	_____	_____
Exporters	_____	_____
Other (specify) _____	_____	_____

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist  
CBI for the listed substance and state the cost of each substitute. A commercially  
feasible substitute is one which is economically and technologically feasible to use  
in your current operation, and which results in a final product with comparable  
performance in its end uses.

☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
UK _____	_____
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

---

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

---

General Instructions:

For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

---

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

---

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

[ ] Process type ..... Controlled Urethane Polymerization Process

---

See attached Block Flow Diagram

---

[ ] Mark (X) this box if you attach a continuation sheet.

---

---

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

See Attached Block Flow Diagram

---

☐ Mark (X) this box if you attach a continuation sheet.

---

**CBI**

[ ]

☐ Mark (X) this box if you attach a continuation sheet.



7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

Process Stream ID Code	Process Stream Description	Physical State <sup>1</sup>	Stream Flow (kg/yr)
7.A	TDI	OL	78,974
7.B	Toluene Line Flush	OL	2,587
7.C	Polyol	OL	270,903
7.D	Toluene	OL	268,293

<sup>1</sup>Use the following codes to designate the physical state for each process stream:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure)  
 SO = Solid  
 SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type ..... Controlled Urethane Polymerization Process

a. Process Stream ID Code	b. Known Compounds <sup>1</sup>	c. Concen- trations <sup>2,3</sup> (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
7.A	TDI	100	UK	
7.C	Polyol	100	UK	
7.B,D	Toluene	100	UK	

7.06 continued below

☐ Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

<sup>1</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	N/A	
2		
3		
4		
5		

<sup>2</sup>Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

<sup>3</sup>Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

☐ Mark (X) this box if you attach a continuation sheet.

---

SECTION 8 RESIDUAL TREATMENT GENERATION, CHARACTERIZATION, TRANSPORTATION, AND  
MANAGEMENT

---

General Instructions:

For questions 8.04-8.06, provide a separate response for each residual treatment block flow diagram provided in question 8.01, 8.02 or 8.03. Identify the process type from which the information is extracted.

For questions 8.05-8.33, the Stream Identification Codes are those process streams listed in either the Section 7 or Section 8 block flow diagrams which contain residuals for each applicable waste management method.

For questions 8.07-8.33, if residuals are combined before they are handled, list those Stream Identification Codes on the same line.

Questions 8.09-8.33 refer to the waste management activities involving the residuals identified in either the Section 7 or Section 8 block flow diagrams. Not all Stream Identification Codes used in the sample answers (e.g., for the incinerator questions) have corresponding process streams identified in the block flow diagram(s). These Stream Identification codes are for illustrative purposes only.

For questions 8.11-8.33, if you have provided the information requested on one of the EPA Office of Solid Waste surveys listed below within the three years prior to your reporting year, you may submit a copy or reasonable facsimile in lieu of answering those questions which the survey addresses. The applicable surveys are: (1) Hazardous Waste Treatment, Storage, Disposal, and Recycling Survey; (2) Hazardous Waste Generator Survey; or (3) Subtitle D Industrial Facility Mail Survey.

---

☐ Mark (X) this box if you attach a continuation sheet.

---

---

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

---

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

---

There are no residual treatments. Refer to  
attached Block Flow diagram for identification  
of the two fugitive emission sources, 7E and 7F.

---

☐ Mark (X) this box if you attach a continuation sheet.

---

## PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

☐ Process type ..... Controlled Urethane Polymerization Process

[illegible]

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

---

8.05 (continued)

<sup>1</sup>Use the following codes to designate the type of hazardous waste:

I = Ignitable  
C = Corrosive  
R = Reactive  
E = EP toxic  
T = Toxic  
H = Acutely hazardous

<sup>2</sup>Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)  
GU = Gas (uncondensable at ambient temperature and pressure)  
SO = Solid  
SY = Sludge or slurry  
AL = Aqueous liquid  
OL = Organic liquid  
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

---

8.05 continued below

---

☐ Mark (X) this box if you attach a continuation sheet.

---

8.05 (continued)

<sup>3</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
<u>1</u>	N/A	
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

<sup>4</sup>Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.



---

8.05 (continued)

<sup>5</sup>Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

<sup>6</sup>Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	<u>Detection Limit</u> <u>(± ug/l)</u>
<u>1</u>	N/A	
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		
<u>6</u>		

---

☐ Mark (X) this box if you attach a continuation sheet.

---

**CBI**

[illegible]

<sup>2</sup>Use the codes provided in Exhibit 8-2 to designate the management methods

58

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in CBI your process block or residual treatment block flow diagram(s).

☐

<u>Incinerator</u>	<u>Combustion Chamber Temperature (°C)</u>		<u>Location of Temperature Monitor</u>		<u>Residence Time In Combustion Chamber (seconds)</u>	
	<u>Primary</u>	<u>Secondary</u>	<u>Primary</u>	<u>Secondary</u>	<u>Primary</u>	<u>Secondary</u>
<u>1</u>	_____	_____	_____	_____	_____	_____
<u>2</u>	_____	_____	_____	_____	_____	_____
<u>3</u>	_____	_____	_____	_____	_____	_____

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1  
No ..... 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual CBI treatment block flow diagram(s).

☐

<u>Incinerator</u>	<u>Air Pollution Control Device<sup>1</sup></u>	<u>Types of Emissions Data Available</u>
<u>1</u>	<u>N/A</u>	_____
<u>2</u>	_____	_____
<u>3</u>	_____	_____

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1  
No ..... 2

<sup>1</sup>Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)  
E = Electrostatic precipitator  
O = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

---

## SECTION 9 WORKER EXPOSURE

---

### General Instructions:

Questions 9.03-9.25 apply only to those processes and workers involved in manufacturing or processing the listed substance. Do not include workers involved in residual waste treatment unless they are involved in this treatment process on a regular basis (i.e., exclude maintenance workers, construction workers, etc.).

---

☐ Mark (X) this box if you attach a continuation sheet.

---

## PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

☐

Data Element	Data are Maintained for:		Year in Which Data Collection Began	Number of Years Records Are Maintained
	Hourly Workers	Salaried Workers		
Date of hire	X	X	1929	*
Age at hire	X	X	1929	*
Work history of individual before employment at your facility	X	X	1929	*
Sex	X	X	1929	*
Race	X	X	1929	*
Job titles	X	X	1929	*
Start date for each job title	X	X	1929	*
End date for each job title	X	X	1929	*
Work area industrial hygiene monitoring data	X	X	1977	30 years
Personal employee monitoring data	N/A	N/A	N/A	N/A
Employee medical history	X	X	1975	30 years
Employee smoking history	N/A	N/A	N/A	N/A
Accident history	X	X	1975	30 years
Retirement date	X	X	1929	*
Termination date	X	X	1929	*
Vital status of retirees	N/A	N/A	N/A	N/A
Cause of death data	N/A	N/A	N/A	N/A

\* 5 years for terminated employees or year of death for retired.

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	N/A		
	Controlled Release	N/A		
	Open	N/A		
On-site use as reactant	Enclosed	78,974	1	400
	Controlled Release	N/A		
	Open	N/A		
On-site use as nonreactant	Enclosed	N/A		
	Controlled Release	N/A		
	Open	N/A		
On-site preparation of products	Enclosed	N/A		
	Controlled Release	N/A		
	Open	N/A		

☐

Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

Mixer Operator II

B

C

D

E

F

G

H

I

J

☐ Mark (X) this box if you attach a continuation sheet.

---

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

See attached Block Flow Diagram.  
All activity shown on the diagram  
occurs in one work area and is  
designated as Work Area 1.

---

☐ Mark (X) this box if you attach a continuation sheet.

---



9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

Work Area ID

Description of Work Areas and Worker Activities

1

Reactor Area (worker pumps TDI from drums and other raw materials from Bulk Tank to Reactor)

2

3

4

5

6

7

8

9

10

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type ..... Controlled Urethane Polymerization Process

Work area ..... 1

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance <sup>1</sup>	Average Length of Exposure Per Day <sup>2</sup>	Number of Days per Year Exposed
A	1	Direct skin contact and inhalation	OL & GU	D	79

<sup>1</sup>Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)  
 SO = Solid

SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

<sup>2</sup>Use the following codes to designate average length of exposure per day:

A = 15 minutes or less  
 B = Greater than 15 minutes, but not exceeding 1 hour  
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours  
 E = Greater than 4 hours, but not exceeding 8 hours  
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

**CBI**

[ ]

**Work area** .....

1

**Labor Category**

 $\leq 0.006$ 

not tested

A

 $\leq 0.006$ 

not tested

1

---

**PART B WORK PLACE MONITORING PROGRAM**

---

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

☐

<u>Sample/Test</u>	<u>Work Area ID</u>	<u>Testing Frequency (per year)</u>	<u>Number of Samples (per test)</u>	<u>Who Samples<sup>1</sup></u>	<u>Analyzed In-House (Y/N)</u>	<u>Number of Years Records Maintained</u>
Personal breathing zone						
General work area (air)	1	50	1	D	Y	30 years
Wipe samples						
Adhesive patches						
Blood samples						
Urine samples						
Respiratory samples						
Allergy tests						
Other (specify)						
Other (specify)						
Other (specify)						

---

<sup>1</sup>Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) Quality Control Technician

---

☐ Mark (X) this box if you attach a continuation sheet.

---

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

<input type="checkbox"/> Sample Type	Sampling and Analytical Methodology
Continuous	Dry, chemically impregnated, continuously moving
	paper tape - ambient air samples are drawn through
	tape. Tape is read on a series 4100 MCM integrating
	Reader/Recorder (see attached spec sheet).

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

<input type="checkbox"/> Equipment Type <sup>1</sup>	Detection Limit <sup>2</sup>	Manufacturer	Averaging Time (hr)	Model Number
E	A	MDA	8 hrs	4000

<sup>1</sup>Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) \_\_\_\_\_

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) \_\_\_\_\_
- I = Other (specify) \_\_\_\_\_

<sup>2</sup>Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter ( $\mu/m^3$ )

☐ Mark (X) this box if you attach a continuation sheet.

---

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency  
(weekly, monthly, yearly, etc.)

N/A

---

☐ Mark (X) this box if you attach a continuation sheet.

---

---

PART C ENGINEERING CONTROLS

---

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

Work area ..... 1

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1974</u>	<u>N</u>	<u>N/A</u>
General dilution	<u>Y</u>	<u>1974</u>	<u>N</u>	<u>N/A</u>
Other (specify) _____	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Vessel emission controls	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Mechanical loading or packaging equipment	<u>Y</u>	<u>1978</u>	<u>N</u>	<u>N/A</u>
Other (specify) _____	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

---

☐ Mark (X) this box if you attach a continuation sheet.

---

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

Work area ..... \_\_\_\_\_

<u>Equipment or Process Modification</u>	<u>Reduction in Worker Exposure Per Year (%)</u>
<u>None</u>	_____
_____	_____
_____	_____
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.



## PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... Controlled Urethane Polymerization Process

Work area ..... 1

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	N
Safety goggles/glasses	N
Face shields	N
Coveralls	Y
Bib aprons	Y
Chemical-resistant gloves	Y
Other (specify)	
<u>Full Face Air Line Respirator</u>	<u>Y</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

Work Area	Respirator Type	Average Usage <sup>1</sup>	Fit Tested (Y/N)	Type of Fit Test <sup>2</sup>	Frequency of Fit Tests (per year)
1	Positive Pressure Air Line, Full Face	E	N	N/A	N/A

<sup>1</sup>Use the following codes to designate average usage:

A = Daily  
 B = Weekly  
 C = Monthly  
 D = Once a year  
 E = Other (specify) Bi-Weekly

<sup>2</sup>Use the following codes to designate the type of fit test:

QL = Qualitative  
 QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

- 9.16 Respirator Maintenance Program -- For each type of respirator used when working with the listed substance, specify the frequency of the maintenance activity, and the person who performs the maintenance activity. Photocopy this question and complete it separately for each respirator type.

Respirator type ..... Positive Pressure, Air Line, Full Face

<u>Respirator Maintenance Activity</u>	<u>Frequency<sup>1</sup></u>	<u>Person Performing Activity<sup>2</sup></u>
Cleaning	<u>A</u>	<u>D</u>
Inspection	<u>A</u>	<u>D</u>
Replacement		
Cartridge/Canister	<u>                    </u>	<u>                    </u>
Respirator unit	<u>                    </u>	<u>                    </u>

<sup>1</sup>Use the following codes to designate the frequency of maintenance activity:

A = After each use

B = Weekly

C = Other (specify)                                     

<sup>2</sup>Use the following codes to designate who performs the maintenance activity:

A = Plant industrial hygienist

B = Supervisor

C = Foreman

D = Other (specify)           User                    

☐ Mark (X) this box if you attach a continuation sheet.

9.17 Respirator Training Program -- Describe your respirator training and re-training programs for each type of respirator used when working with the listed substance. Photocopy this question and complete it separately for each respirator type.

a.

Respirator type ..... Positive Pressure, Air Line, Full Face

Type of Training <sup>1</sup>	Number of Workers Trained	Location of Training <sup>2</sup>	Length of Training (hrs)	Person Performing Training <sup>3</sup>	Frequency <sup>4</sup>
R	1	C	1	D	C

b.

Respirator type ..... N/A

Type of Re-training <sup>1</sup>	Number of Workers Re-trained	Location of Re-Training <sup>2</sup>	Length of Re-Training (hrs)	Person Performing Re-Training <sup>3</sup>	Frequency <sup>4</sup>
N/A					

<sup>1</sup>Use the following codes to designate the type of training or re-training:

E = Emergency  
R = Routine

<sup>2</sup>Use the following codes to designate the location of training or re-training:

A = Outside plant instruction  
B = In-house classroom instruction  
C = On-the-job  
D = Other (specify) \_\_\_\_\_

<sup>3</sup>Use the following codes to designate the person who performs the training or re-training:

A = Plant industrial hygienist  
B = Supervisor  
C = Foreman  
D = Other (specify) \_\_\_\_\_ Lead Operator

<sup>4</sup>Use the following codes to designate the frequency of respirator training or re-training:

A = Monthly  
B = Fixed monthly  
C = Other (specify) \_\_\_\_\_ Initial Job Training

☐ Mark (X) this box if you attach a continuation sheet.

- 9.18 For each type of personal protective clothing and safety equipment used when working with the listed substance, indicate whether you have conducted a permeation test on the clothing or equipment for the listed substance.

<u>Clothing and Equipment</u>	<u>Permeation Tests Conducted (Y/N)</u>
Coveralls	N
Bib apron	N
Gloves	N
Other (specify)	

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type ..... Controlled Urethane Polymerization Process

Work area ..... 1

Worker Training - Safe handling procedures for TDI

Restrict entrance only to authorized personnel

Warning Signs

General Work Area (Air) Monitoring

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... Controlled Urethane Polymerization Process

Work area ..... 1

Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day
Sweeping				
Vacuuming				
Water flushing of floors				
Other (specify)	Engineering controls prevent routine leaks or spills of TDI. If a spill event were to occur, TDI Neutralizer would be used to convert TDI into non-TDI urea type compounds.			

☐ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes ..... 1

No ..... 2

Emergency exposure

Yes ..... 1

No ..... 2

If yes, where are copies of the plan maintained?

Routine exposure: Policy & Procedure Manual, Section 1000, Health & Safety

Emergency exposure: Policy & Procedure Manual, Section 1000, Health & Safety

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes ..... 1

No ..... 2

If yes, where are copies of the plan maintained? Central location within each Department

Has this plan been coordinated with state or local government response organizations?  
Circle the appropriate response.

Yes ..... 1

No ..... 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist ..... 1

Insurance carrier ..... 2

OSHA consultant ..... 3

Other (specify) \_\_\_\_\_ 4

☐ Mark (X) this box if you attach a continuation sheet.

---

9.24 Who is responsible for safety and health training at your facility? Circle the appropriate response.

Plant safety specialist ..... 1  
Insurance carrier ..... 2  
OSHA consultant ..... 3  
Other (specify) Plant Safety Officer & Environmental Engineer..... 4

---

9.25 Who is responsible for the medical program at your facility? Circle the appropriate response.

Plant physician ..... 1  
Consulting physician ..... 2  
Plant nurse ..... 3  
Consulting nurse ..... 4  
Other (specify) \_\_\_\_\_ ..... 5

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☐ Mark (X) this box if you attach a continuation sheet.

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## SECTION 10 ENVIRONMENTAL RELEASE

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### General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

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### PART A GENERAL INFORMATION

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10.01 Where is your facility located? Circle all appropriate responses.

#### CBI

- ☐ Industrial area ..... 1
- Urban area ..... 2
- Residential area ..... 3
- Agricultural area ..... 4
- Rural area ..... 5
- Adjacent to a park or a recreational area ..... 6
- Within 1 mile of a navigable waterway ..... 7
- Within 1 mile of a school, university, hospital, or nursing home facility ..... 8
- Within 1 mile of a non-navigable waterway ..... 9
- Other (specify) \_\_\_\_\_ 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ..... 033 ° 57 ' 30 "

Longitude ..... 080 ° 58 ' 40 "

UTM coordinates ..... Zone N/A, Northing \_\_\_\_\_, Easting \_\_\_\_\_

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation ..... inches/year

Predominant wind direction .....  
*10.03 - 10.04 Response Not Required for TDI*

10.04 Indic. \_\_\_\_\_ ter below your facility.

Depth ..... meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

☐

On-Site Activity	Environmental Release		
	Air	Water	Land
Manufacturing	N/A	N/A	N/A
Importing	N/A	N/A	N/A
Processing	Y	N	N
Otherwise used	N/A	N/A	N/A
Product or residual storage	N/A	N/A	N/A
Disposal	N/A	N/A	N/A
Transport	N/A	N/A	N/A

☐ Mark (X) this box if you attach a continuation sheet.

---

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

☐

Quantity discharged to the air .....	<u>130</u>	kg/yr ± <u>10</u> %
Quantity discharged in wastewaters .....	<u>N/A</u>	kg/yr ± <u>0</u> %
Quantity managed as other waste in on-site treatment, storage, or disposal units .....	<u>N/A</u>	kg/yr ± <u>0</u> %
Quantity managed as other waste in off-site treatment, storage, or disposal units .....	<u>N/A</u>	kg/yr ± <u>0</u> %

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☐ Mark (X) this box if you attach a continuation sheet.

---

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
7E & 7F	Good engineering design and operating	
	practices to minimize fugitive emissions	N/A

☐ Mark (X) this box if you attach a continuation sheet.

---

PART B RELEASE TO AIR

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- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type ..... Controlled Urethane Polymerization Process

Point Source  
ID Code

Description of Emission Point Source

7E

Fugitive emissions from Reactor Agitator  
shaft fitting.

7F

Fugitive emissions from TDI Drum when bung is  
removed from drum, and pump drum/hose fitting is  
connected and disconnected after emptying drum.

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☐ Mark (X) this box if you attach a continuation sheet.

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☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics -- Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Physical State <sup>1</sup>	Average Emissions (kg/day)	Frequency <sup>2</sup> (days/yr)	Duration <sup>3</sup> (min/day)	Average Emission Factor <sup>4</sup>	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
7E	V	1.35	79	300	N/A	negligible	N/A	N/A
7F	V	0.29	79	40	N/A	negligible	N/A	N/A

<sup>1</sup>Use the following codes to designate physical state at the point of release:  
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) \_\_\_\_\_

<sup>2</sup>Frequency of emission at any level of emission

<sup>3</sup>Duration of emission at any level of emission

<sup>4</sup>Average Emission Factor — Provide estimated ( $\pm$  25 percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m) <sup>1</sup>	Building Width(m) <sup>2</sup>	Vent Type <sup>3</sup>
N/A							

<sup>1</sup>Height of attached or adjacent building

<sup>2</sup>Width of attached or adjacent building

<sup>3</sup>Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

☐

Point source ID code .....

Size Range (microns)

Mass Fraction (%  $\pm$  % precision)

< 1

N/A

$\geq 1$  to < 10

$\geq 10$  to < 30

$\geq 30$  to < 50

$\geq 50$  to < 100

$\geq 100$  to < 500

$\geq 500$

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.



PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Controlled Urethane Polymerization Process  
 Percentage of time per year that the listed substance is exposed to this process type ..... 0.9% %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals <sup>1</sup>						
Packed	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Mechanical	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>1</u>	<u>N/A</u>
Double mechanical <sup>2</sup>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Compressor seals <sup>1</sup>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Flanges	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Valves						
Gas <sup>3</sup>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Liquid	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>3</u>	<u>N/A</u>
Pressure relief devices <sup>4</sup> (Gas or vapor only)	<u>N/A</u>	<u>1</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Sample connections						
Gas	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Liquid	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Open-ended lines <sup>5</sup> (e.g., purge, vent)						
Gas	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Liquid	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

<sup>1</sup>List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐ Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

<sup>2</sup>If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

<sup>3</sup>Conditions existing in the valve during normal operation

<sup>4</sup>Report all pressure relief devices in service, including those equipped with control devices

<sup>5</sup>Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

☐

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel <sup>1</sup>	c. Control Device	d. Estimated Control Efficiency <sup>2</sup>
1	5-10%	None	N/A

<sup>1</sup>Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

<sup>2</sup>The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Controlled Urethane Polymerization  
Process

Equipment Type	Leak Detection	Detection Device <sup>1</sup>	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
	Concentration (ppm or mg/m <sup>3</sup> ) Measured at _____ Inches from Source				
Pump seals					
Packed	N/A				
Mechanical					
Double mechanical					
Compressor seals					
Flanges					
Valves					
Gas					
Liquid					
Pressure relief devices (gas or vapor only)					
Sample connections					
Gas					
Liquid					
Open-ended lines					
Gas					
Liquid					

<sup>1</sup>Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Vessel Type <sup>1</sup>	Floating Roof Seals <sup>2</sup>	Composition of Stored Materials <sup>3</sup>	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Vessel Volume (l)	Operating Vessel Emission Controls <sup>4</sup>	Design Flow Rate <sup>5</sup>	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate <sup>6</sup>
N/A													

<sup>1</sup>Use the following codes to designate vessel type:

F = Fixed roof  
 CIF = Contact internal floating roof  
 NCIF = Noncontact internal floating roof  
 EFR = External floating roof  
 P = Pressure vessel (indicate pressure rating)  
 H = Horizontal  
 U = Underground

<sup>2</sup>Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary  
 MS2 = Shoe-mounted secondary  
 MS2R = Rim-mounted, secondary  
 LM1 = Liquid-mounted resilient filled seal, primary  
 LM2 = Rim-mounted shield  
 LMW = Weather shield  
 VM1 = Vapor mounted resilient filled seal, primary  
 VM2 = Rim-mounted secondary  
 VMW = Weather shield

<sup>3</sup>Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

<sup>4</sup>Other than floating roofs

<sup>5</sup>Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

<sup>6</sup>Use the following codes to designate basis for estimate of control efficiency:

C = Calculations  
 S = Sampling

---

PART E NON-ROUTINE RELEASES

---

- 10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
<u>1</u>	<u>N/A</u>	<u></u>	<u></u>	<u></u>
<u>2</u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>3</u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>4</u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>5</u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>6</u>	<u></u>	<u></u>	<u></u>	<u></u>

- 
- 10.24 Specify the weather conditions at the time of each release.

<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
<u>1</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>2</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>3</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>4</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>5</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u>6</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

10.24 - 10.35  
Response NOT Required  
for TOI

---

☐ Mark (X) this box if you attach a continuation sheet.

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APPENDIX I: List of Continuation Sheets

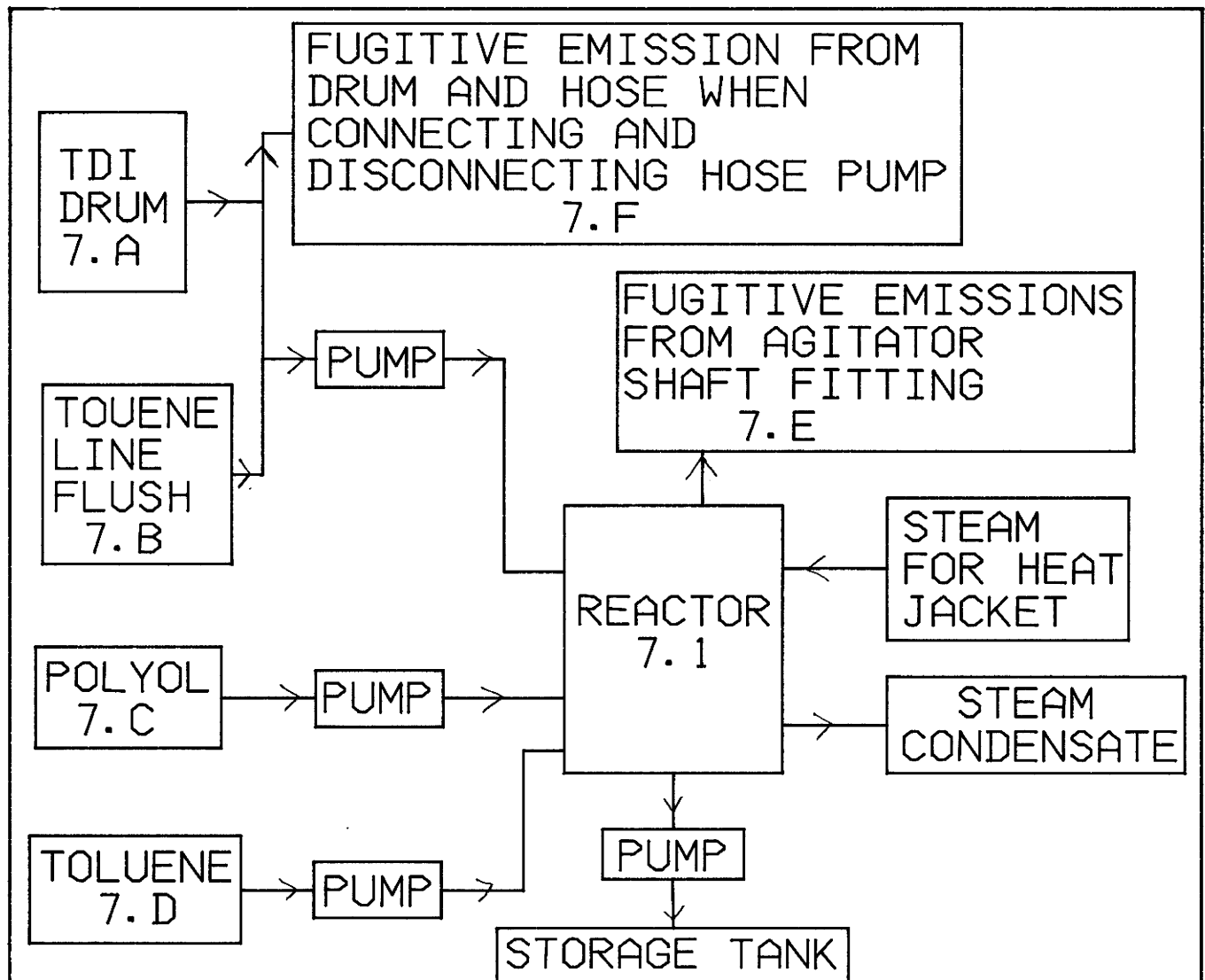
Attach continuation sheets for sections of this form and optional information after this page. In column 1, clearly identify the continuation sheet by listing the question number to which it relates. In column 2, enter the inclusive page numbers of the continuation sheet for each question number.

[illegible]

☐ Mark (X) this box if you attach a continuation sheet.

# CONTROLLED URETHANE POLYMERIZATION PROCESS

## BLOCK FLOW DIAGRAMS 7.01, 7.03, AND 8.01



\* ALL TDI(CAIR LISTED SUBSTANCE)  
CONSUMED IN REACTOR 7.1

\* ALL ACTIVITY DETAILED ON THIS FLOW  
DIAGRAM IS DESIGNATED WORK AREA 1

\* EMISSIONS POINTS ARE FUGITIVE AND  
IDENTIFIED AS 7.E AND 7.F

SECTION I - IDENTIFICATION

MSDS FILE 563

CLASS A  
CLASS R

CHEMICAL NAME & SYNONYMS Toluene Diisocyanate 80-20		
CHEMICAL FAMILY Isocyanate	FORMULA $C_9H_9N_2O_2$	PRODUCT TDI 80-20
DESCRIPTION Clear colorless to pale yellow liquid with sharp pungent odor		CAS NO. 26471-62-5

SECTION II - NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Harmful if swallowed. Avoid contact with eyes, skin or clothing. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor. Protect against physical damage. Store in a cool, dry, well-ventilated place, away from areas where a fire hazard may be acute. Outside or detached storage is preferred. Blanket storage tanks with inert gas (nitrogen) or dry air. Separate from oxidizing materials.

PROTECTIVE EQUIPMENT

EYES Goggles  
GLOVES Rubber, NBR or PVA  
OTHER Coveralls, impervious footwear

VENTILATION REQUIREMENTS

As required to keep airborne concentrations below TLV

SECTION III - HAZARDOUS INGREDIENTS

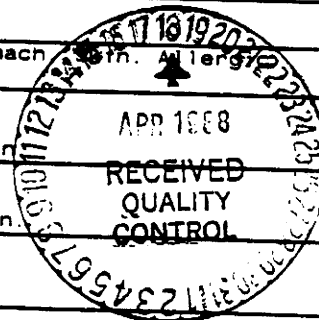
BASIC MATERIAL	OSHA PEL	LD50	LC50	SIGNIFICANT EFFECTS
Toluene-2,4-diisocyanate CAS No. 584-84-9	0.02 ppm ceiling	5.8 g/kg (rat)	10 ppm/4 hrs (mouse)	Skin, eye, mucous membrane irritation. Pulmonary irritant. Allergic sensitization to skin and respiratory tract. May cause asthma attacks.
Toluene-2,6-diisocyanate, CAS No. 91-08-7	None established	No data	11 ppm/4 hrs-mouse	Irritation

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT 270°F COC METHOD	OSHA CLASSIFICATION Not Regulated (Ignitable)	FLAMMABLE EXPLOSIVE LIMIT	LOWER 0.9%	UPPER 9.5%
EXTINGUISHING MEDIA Water, carbon dioxide or dry chemical. Use water to keep the exposed containers cool.				
SPECIAL FIRE HAZARD & FIRE FIGHTING PROCEDURES Water spray should be used to cool fire exposed containers and/or to disperse unignited vapors. Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus when any material is involved in a fire.				

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 0.005 ppm TWA, 0.02 ppm STEL - 2.4 TDI (ACGIH 1987-88)
SYMPTOMS OF OVER EXPOSURE May cause irritation to eyes, throat, lungs, stomach with. Allergic sensitization to skin and respiratory tract. May cause asthma attacks
EMERGENCY FIRST-AID PROCEDURES
SKIN Immediately flush thoroughly with water for 15 minutes, call a physician.
EYES Immediately flush thoroughly with water for 15 minutes, call a physician.
INGESTION Immediately drink large quantities of water to dilute.
INHALATION Immediately remove victim to fresh air. Call a physician.





**CLASS A CLASS B**

PRODUCT CODE 898864

CHEMICAL NAME TDI 80-20

Page T-35

## SECTION VI - TOXICOLOGY (PRODUCT)

**ACUTE ORAL LD 50** 5.8 g/kg (rats). Harmful if swallowed.

**ACUTE DERMAL LD 50** > 2 g/kg (rabbits)

**ACUTE INHALATION LC 50** 10 ppm/4 hrs (mouse)

**CARCINOGENICITY** Oral Exposure-Positive NTP Bioassay.

**MUTAGENICITY** Not known to be mutagenic

**EYE IRRITATION** Irritation and/or burns

**PRIMARY SKIN IRRITATION** Irritation and/or burns

### PRINCIPAL ROUTES OF ABSORPTION

Inhalation, dermal contact

**EFFECTS OF ACUTE EXPOSURE** May cause irritation to lungs, eyes, throat, stomach, skin. Allergic sensitization of skin and respiratory tract. Corneal injury may occur.

**EFFECTS OF CHRONIC EXPOSURE** Damage/allergic sensitization to lungs. Inhalation studies indicate not carcinogenic. Carcinogenic risk from industrial use is not significant.

## SECTION VII - SPILL AND LEAKAGE PROCEDURES (CONTROL PROCEDURES)

### ACTION FOR MATERIAL RELEASE OR SPILL

Wear NIOSH/MSHA approved positive pressure supplied air respirator. Follow OSHA regulations for respirator use (see 29 CFR 1910.134). Wear goggles, coveralls and impervious gloves and boots. Add dry non-combustible absorbent, sweep up material and place in an approved DOT container. Add an equal amount of neutralizing solution to the container (90-95% water, 5-10% ammonia). Clean remaining surfaces with neutralizing solution and add this to container. Isolate container in a well-ventilated place and do not seal for 24 hrs. Ammonia vapors may be generated until solution is neutralized. Wash all contaminated clothing before reuse. In the event of a large spill use the telephone number shown on the front of this sheet.

**TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300**

### WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate Federal, State and local regulatory agencies to ascertain proper disposal procedures.

## SECTION VIII - SHIPPING DATA

D.O.T. Toluene diisocyanate Poison B UN 2078

## SECTION IX - REACTIVITY DATA

STABLE <input checked="" type="checkbox"/>	UNSTABLE <input type="checkbox"/>	AT <input type="checkbox"/> F <input checked="" type="checkbox"/>	HAZARDOUS POLYMERIZATION <input type="checkbox"/>	MAY OCCUR <input checked="" type="checkbox"/>	WILL NOT OCCUR <input type="checkbox"/>
<b>CONDITIONS TO AVOID</b> Water or incompatible materials in a closed system, excess heat <b>INCOMPATIBILITY(MATERIAL TO AVOID)</b> Acids, bases and alcohols, surface active materials <b>HAZARDOUS DECOMPOSITION PRODUCTS</b> Carbon monoxide, nitrogen oxides, hydrogen cyanide					

## SECTION X - PHYSICAL DATA

MELTING POINT 53-56°F	VAPOR PRESSURE .01mmHg, 20°C	VOLATILES No data
BOILING POINT 484°F	SOLUBILITY IN WATER Insoluble	EVAPORATION RATE No data
SPECIFIC GRAVITY(H2O=1) 1.22	PH No data	VAPOR DENSITY(AIR=1) 6.0

INFORMATION: FURNISHED TO

FURNISHED BY DATE SEPTEMBER 9, 198

ATTN: DEPT HANDLING MATL SAFETY DATA SHEETS  
 WANDA COLEMAN  
 ANCHOR CONTINENTAL, INC.  
 P.O. DRAWER G  
 COLUMBIA, SC 29250

Department of Environmental Hygiene and Toxicology  
 (203) 789-5436

**Olin CORPORATION**  
 120 Long Ridge Road, Stamford, Connecticut 06904

## INSTRUCTION MANUAL

### Series 4000 MCM (Miniature Continuous Monitor) Personal Monitoring System

#### I. General Description

The MCM System consists of a Miniature Continuous Monitor, for breathing zone or ambient air monitoring, and a MCM Integrating Reader/Recorder, calibrated for a specific toxic substance and range. The Series 4000 Miniature Continuous Monitors are based on the well-established principle of a dry, chemically impregnated, continuously moving paper tape that, when exposed to the appropriate contaminant, develops a stain proportional to the concentration of the contaminant. Ambient air samples are drawn through the tape continuously by means of an integral pump. The tape is wound onto a take-up reel with an interleaf to prevent stain diffusion and removed at the end of the sampling period.

After a period of exposure, up to 8 hours, the tape is read on the Series 4100 MCM Integrating Reader/Recorder. This unit incorporates a strip chart recorder, which measures and records concentrations versus time, and a linearizing integrating circuit which computes the exposure integral in ppm-hrs. The information is recorded in the form of a Datagram<sup>tm</sup> which includes the real time/concentration profile, indicating the duration and magnitude of excursions, and a bar graph readout of total dose (ppm-hrs.) for the exposure period, allowing direct calculation of the TWA (Time Weighted Average).

#### II. Specifications

##### Series 4000 MCM (Miniature Continuous Monitor)

Ranges:            0-0.08 ppm TDI    Model 4000  
                      0-0.4    ppm Phosgene Model 4020  
                      0-0.08 ppm TDA    Model 4090

Tape Speed: 2 cm/hour, fixed

Sampling Rate: Up to 500 cc/min. Factory set to 100 cc/min.

Running Time: 10 hours per power supply unit charge

Power Requirements: 4.6 volts nominal, 0.5 watts nominal

Power Connection Length: 20", flexible

Dimensions: 6"L x 4"W x 2½"H

Weight: 1½ lbs. including pump, excluding power supply unit

Designed for Intrinsic Safety - U. S. Bureau of Mines Certification for Methane pending.



**ANCHOR CONTINENTAL, INC.**

2000 S. BELTLINE BLVD.  
POST OFFICE DRAWER G  
COLUMBIA, SOUTH CAROLINA 29250

**To:** Document Processing Center  
Office of Toxic Substances, TS-790  
U.S. Environmental Protection Agency  
401 M Street, Southwest  
Washington, D.C. 20460

ATTN: CAIR Reporting Office

